Fall 2018

Reports of the Commissioner of the Environment and Sustainable Development to the Parliament of Canada

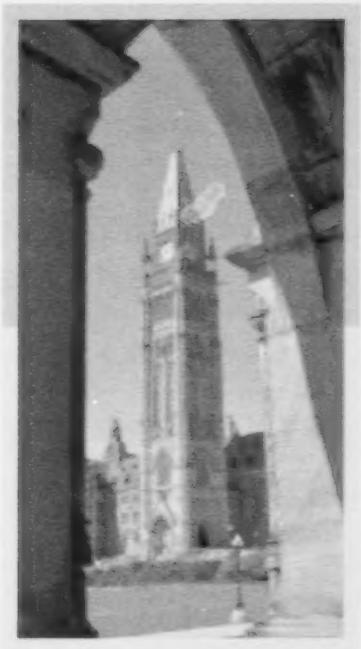
Independent Auditor's Report

REPORT 2

Protecting Marine Mammals

Office of the Auditor General of Canada

Bureau du vérificateur général du Canada



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Performance audit reports

This report presents the results of a performance audit conducted by the Office of the Auditor General of Canada under the authority of the *Auditor General Act*.

A performance audit is an independent, objective, and systematic assessment of how well government is managing its activities, responsibilities, and resources. Audit topics are selected based on their significance. While the Office may comment on policy implementation in a performance audit, it does not comment on the merits of a policy.

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- establish audit objectives and criteria for the assessment of performance,
- gather the evidence necessary to assess performance against the criteria,
- report both positive and negative findings,
- conclude against the established audit objectives, and
- make recommendations for improvement when there are significant differences between criteria and assessed performance.

Performance audits contribute to a public service that is ethical and effective and a government that is accountable to Parliament and Canadians.

The Report is available on our website at www.oag-bvg.gc.ca.

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Table of Contents

Introduction 1

Background 1

Focus of the audit 3

Findings, Recommendations, and Responses 3

Recovery measures for endangered and threatened marine mammals 4

Fisheries and Oceans Canada's recovery measures to protect marine mammals listed under the *Species at Risk Act* were limited 4

Marine protected areas 8

Marine protected areas did not significantly contribute to the protection of marine mammals 8

Reducing threats to marine mammals 13

Fisheries and Oceans Canada did not fully apply the available tools and policies to proactively reduce the threat of commercial fishing but did implement recent measures 13

Federal organizations began to take steps to reduce threats from marine traffic 16

Supporting distressed marine mammals 21

Fisheries and Oceans Canada's support for distressed marine mammals was insufficient 21

Conclusion 24

About the Audit 25

List of Recommendations 28

Appendix

Distribution of marine mammal species in Canadian waters 33

Introduction

Background

Marine mammals in Canada

2.1 Canada has the longest coastline in the world, and oceans under the country's jurisdiction are home to more than 40 marine mammal species, including whales, dolphins, porpoises, sea lions, seals, walruses, and sea otters (see the full list in the Appendix). Although these marine mammals are important to Canadian ecosystems and culture, many species are in decline because of human activities. The federal government currently considers 14 populations of marine mammal species as **endangered** or **threatened**.

2.2 Certain human activities pose indirect threats to marine mammals, such as threats resulting from climate change and contaminants. Other activities pose direct threats, such as threats resulting from interactions with commercial fishing and marine vessels. Direct threats include

- collisions with ships;
- underwater noise and disturbance from vessels;
- contamination from vessels, such as oil spills;
- bycatch (being caught unintentionally by fishers);
- entanglement in fishing gear, such as ropes or traps;
- depletion of food sources by fisheries; and
- habitat loss.

Pacific white-sided dolphin
Photo: Maria Harvey/Shutterstock.com

Humpback whale
Photo: NaturesMomentsuk/Shutterstock.com

Atlantic grey seal pup
Photo: davemhuntphotography/Shutterstock.com

Endangered species—A wildlife species that is facing imminent **extirpation** or extinction (that is, the species no longer exists anywhere in the world).

Extirpated species—A wildlife species that no longer exists in the wild in Canada but exists elsewhere in the wild.

Threatened species—A wildlife species that is likely to become an endangered species if nothing is done to reverse the factors leading to its extirpation or extinction.

Roles and responsibilities

2.3 The federal government is responsible for protecting marine mammals. The responsibility to reduce threats from human activity is shared among several organizations.

2.4 **Fisheries and Oceans Canada.** This department is the lead organization mandated to protect marine mammals in waters under the jurisdiction of Canada according to the *Fisheries Act* and the *Marine Mammal Regulations*. The Department is responsible for developing and implementing policies and programs to support Canada's economic, ecological, and scientific interests in marine waters. It is also responsible for managing aquatic species listed under the *Species at Risk Act*. The Department has a leadership role in ocean management, as outlined in the *Oceans Act*, which includes establishing marine protected areas. The Canadian Coast Guard, as a special operating agency of the Department, is responsible for providing aids to navigation, marine communications, marine traffic-management services, and incident command during oil spills of unknown origin at sea.

2.5 **Environment and Climate Change Canada.** This department is responsible for listing aquatic and terrestrial species under the *Species at Risk Act*, protecting terrestrial species at risk under the Act, and administering the Act. The Department establishes marine and terrestrial national wildlife areas, under the *Canada Wildlife Act*, for wildlife interpretation, conservation, and research. The Department is also responsible for establishing migratory bird sanctuaries, under the *Migratory Birds Convention Act, 1994*, many of which have marine components. The Department provides scientific advice to responders and agencies, at the federal, provincial, territorial, and municipal levels, on how best to reduce the environmental effects of spills of hazardous substances, such as oil.

2.6 **Parks Canada.** This agency is responsible for establishing national marine conservation areas, under the *Canada National Marine Conservation Areas Act*, with the aim of protecting and conserving them for the benefit, education, and enjoyment of the public. The Agency is also responsible for establishing national parks, under the *Canada National Parks Act*, which can include marine components, as well as the Saguenay–St. Lawrence Marine Park, established under its own separate legislation. Under the *Species at Risk Act*, the Agency is responsible for individuals of aquatic species on the federal lands that it administers.

2.7 **Transport Canada.** This department is responsible for the government's transportation policies, plans, and programs. The Department develops policy and regulations for domestic marine vessels, with guidance from the International Maritime Organization, a United Nations agency that is the recognized authority for the safety, security, and environmental performance of international shipping. The Department is mandated to protect the marine environment in navigation

and shipping under the *Canada Shipping Act, 2001* and the *Canada Marine Act*. The Department also leads Canada's National Oil Spill Preparedness and Response Regime.

Focus of the audit

2.8 This audit focused on whether Fisheries and Oceans Canada, Environment and Climate Change Canada, Parks Canada, and Transport Canada had adequately protected marine mammals in waters under the jurisdiction of Canada from threats posed by marine vessels and commercial fishing (not including the harvesting of marine mammals).

2.9 The audit focused on direct threats to marine mammals, including

- threats posed by commercial fishing, such as bycatch, entanglement in fishing gear, and depletion of marine mammals' food sources; and
- threats posed by marine vessels, such as oil spills, collisions with ships, and chronic noise and disturbance.

2.10 This audit is important because marine mammals are culturally significant to Canadians. Marine mammals also provide livelihoods to Indigenous and coastal communities, contribute economically to the whale-watching and tourism industries, and support healthy ecosystems. Moreover, commercial fishing and marine vessels can affect Canada's marine mammal populations. As Canada's economy grows, the risk of interactions with marine mammals will increase. If not properly managed, these interactions could also affect the country's economy and environment, as well as Canada's reputation in wildlife protection.

2.11 More details about the audit objective, scope, approach, and criteria are in **About the Audit** at the end of this report (see pages 25–27).

Findings, Recommendations, and Responses

Overall message →

2.12 Overall, we found that Fisheries and Oceans Canada, Environment and Climate Change Canada, Parks Canada, and Transport Canada had not fully applied existing policies and tools to proactively manage threats to marine mammals from commercial fishing and marine vessels, such as entanglements, bycatch, depletion of food sources, noise and disturbance, oil spills, and collisions with marine vessels. These policies and tools included recovery strategies and action plans under the *Species at Risk Act*, guidelines for planning and managing marine protected areas, and integrated fisheries management plans to implement the Policy on Managing Bycatch. We also found that Fisheries and Oceans Canada lacked the resources and national guidance to effectively support the partners working to respond to distressed marine mammals.

2.13 Since 2017—when 12 endangered whales were found dead in Canadian waters—federal organizations have begun to implement a variety of measures and actions aimed at protecting marine mammals by reducing threats from commercial fishing and marine vessels. For example, federal organizations have put in place measures to limit commercial salmon fishing with the aim of increasing food sources for the southern resident killer whale; to reduce entanglements and bycatch from fisheries for the North Atlantic right whale; and to introduce speed limits in some areas to protect both the North Atlantic right whale and the St. Lawrence Estuary beluga whale. Although organizations have recently reacted to these threats for three endangered species, they have yet to apply sustained planning and management policies, tools, and measures to reduce threats for all marine mammals.

2.14 The measures that federal organizations have recently begun to implement are presented in this report but have not been audited because their implementation was under way at the end of our audit period.

Recovery measures for endangered and threatened marine mammals

Fisheries and Oceans Canada's recovery measures to protect marine mammals listed under the *Species at Risk Act* were limited

What we found

2.15 We found that for 11 of the 14 marine mammal species listed as endangered or threatened under the *Species at Risk Act*, Fisheries and Oceans Canada could not demonstrate whether it had implemented any specific management measures to reduce the threats posed by commercial fishing and marine vessels. However, for 3 endangered whale species, the Department had taken some recovery action. We also found that the Department had not met most deadlines for finalizing required recovery strategies and action plans.

2.16 Our analysis supporting this finding presents what we examined and discusses the following topics:

- Recovery strategies and action plans
- Implementing recovery measures

Why this finding matters

2.17 This finding matters because measures to reduce the threats from commercial fishing and marine vessels can help protect endangered and threatened marine mammal populations. The absence of these measures can impede the recovery of marine mammals or drive them more rapidly to extinction.

Context

2.18 The *Species at Risk Act* passed into law in 2002. At that time, however, the Committee on the Status of Endangered Wildlife in Canada had already considered several species listed under the Act as endangered or threatened for decades. Under the Act, Fisheries and Oceans Canada is responsible for aquatic species. Once species are listed as endangered or threatened, individuals of these species are protected from being killed, harmed, captured, taken, or harassed. For all endangered or threatened species, the Department must develop recovery strategies within the time frame set out in the Act; these strategies set targets for the species' recovery. The Department must also prepare action plans that state the recovery measures required to meet the strategies' targets within specific time frames.

Recommendation

2.19 Our recommendation in this area of examination appears at paragraph 2.27.

Analysis to support this finding

2.20 **What we examined.** We examined whether Fisheries and Oceans Canada had completed the required recovery strategies and action plans for endangered and threatened marine mammals within the required time frames. We also examined whether the Department had identified threats from commercial fishing and marine vessels in those recovery strategies and action plans, and whether it had implemented corresponding recovery measures.

2.21 **Recovery strategies and action plans.** The *Species at Risk Act* lists 14 marine mammal populations as endangered or threatened; 11 have been listed for over a decade. Fisheries and Oceans Canada is required to prepare a recovery strategy within one year after the species is listed as endangered and within two years after the species is listed as threatened. The Department is also required to develop an action plan within the time frame determined by the recovery strategy.

2.22 We found that the Department completed the required recovery strategies on time for only 4 of the 14 species. We also found that none of the action plans were completed by the required deadlines. For example, the North Atlantic right whale was listed as endangered in 2005, the recovery strategy was completed in 2009 and updated in 2014, and the action plan has remained in draft since 2016.

2.23 In 2017, the Department finalized action plans for 7 marine mammals. However, delays in approving these documents stalled commitments to take action aimed at the marine mammals' recovery (Exhibit 2.1).

Exhibit 2.1 **Recovery strategies and action plans for most threatened or endangered marine mammals were finalized years late**

Marine mammal and population or subspecies	Year listed	When recovery strategy was finalized	When action plan was finalized	Year action plan finalized
Endangered				
Beluga whale* (St. Lawrence Estuary)	2017	Due in 2018 (to be finalized)	Due date not known	Not applicable
Blue whale (Atlantic)	2005	3 years late	4 years overdue (not yet finalized)	Not finalized
Blue whale (Pacific)	2005	On time	9 years late	2017
Harbour seal (Lacs des Loups Marins)	2017	On time	Due in 2023 (to be finalized)	Not applicable
Killer whale (Southern resident)	2003	4 years late	4 years late	2017
Northern bottlenose whale (Scotian Shelf)	2006	3 years late	1 year late	2017
Right whale (North Atlantic)	2005	3 years late	2 years overdue (not yet finalized)	Not finalized
Right whale (North Pacific)	2006	4 years late	1 year late	2017
Sei whale (Pacific)	2005	On time	9 years late	2017
Threatened				
Beluga whale* (St. Lawrence Estuary)	2005	5 years late	2 years overdue (not yet finalized)	Not finalized
Beluga whale (Cumberland Sound)	2017	Due in 2019 (to be finalized)	Due date not known	Not applicable
Fin whale (Pacific)	2006	On time	9 years late	2017
Killer whale (Northern resident)	2003	3 years late	4 years late	2017
Killer whale (Offshore)	2011	5 years overdue (not yet finalized)	Due date not known	Not applicable
Killer whale (Transient)	2003	2 years late	9 years overdue (not yet finalized)	Not finalized

* The St. Lawrence Estuary beluga whale was listed as threatened from 2005 to 2017, and then as endangered. Both time frames are included in the exhibit.

Source: Fisheries and Oceans Canada documents

2.24 **Implementing recovery measures.** We found that the Department's recovery strategies and action plans outlined specific management measures for commercial fishing and marine vessels. Management measures included, for example, integrating marine mammals in oil spill response plans, finalizing amendments to the *Marine Mammal Regulations*, and reducing the risk of ship collisions and entanglement. We found that the Department could not demonstrate whether it had implemented any of these measures for 11 of the 14 endangered and threatened species.

Beluga whale
Photo: JohnL/Shutterstock.com

2.25 For the other 3 species (the St. Lawrence Estuary beluga whale, the North Atlantic right whale, and the southern resident killer whale), the Department stated in reviews it undertook in 2017 that few management measures had been implemented, and it concluded that those measures were not enough. It also identified measures required to reduce noise, prevent entanglements, and reduce the effects of marine traffic.

2.26 We noted that in 2017 and 2018, the Department had begun to implement management measures to address these threats to the southern resident killer whale and the North Atlantic right whale. These measures are discussed further in our report.

Right whale
Photo: rm/Shutterstock.com

2.27 **Recommendation.** Fisheries and Oceans Canada, working with its partners, should implement the recovery measures identified in its action plans within the established time frames to reduce the threats to endangered and threatened marine mammals posed by commercial fishing and marine traffic. The Department should also report on the effectiveness of these measures five years after the approval of the action plans.

Killer whale
Photo: Tory Kallman/Shutterstock.com

Fisheries and Oceans Canada's response. *Agreed. Fisheries and Oceans Canada will work, to the extent feasible, within the confines of partner willingness and available resources to implement the recovery measures identified in species at risk action plans to reduce the threats faced by marine mammals from commercial fishing activities and marine vessels. Efforts will be made to implement actions consistent with time frames established in the action plans. These action plans will be revisited in the event that it is not possible for the Department to implement or commit to the measures.*

Reporting on the progress of implementation of recovery actions will occur five years after approval of the action plan as required under the Species at Risk Act. *This report will include an evaluation of the effectiveness of the implemented measures toward reducing the threats associated with commercial fishing activities and marine vessels and toward advancing recovery of the populations, where data to support such an evaluation is available. Given the long generation time of most marine mammals and the need for ongoing monitoring and new scientific information in order to assess effectiveness, demonstrating progress on effectiveness of actions could, in many cases, require time frames longer than five years.*

Implementation of many recovery actions is already under way and will continue. Fisheries and Oceans Canada will review outstanding recovery measures related to reducing threats to threatened and endangered marine mammals from commercial fishing and marine traffic. The Department will also develop a plan with priorities, targets, and timelines to implement these measures, to the extent possible, working with partners and available resources. A plan will be developed by the end of the 2018–19 fiscal year.

Reporting on progress against action plans will be conducted in five-year intervals as required under the Species at Risk Act.

Marine protected areas

Marine protected areas did not significantly contribute to the protection of marine mammals

What we found

2.28 We found that marine protected areas offered marine mammals only limited protection from threats posed by commercial fishing and marine traffic. We also found that marine mammals were not consistently considered when marine protected areas were being established.

2.29 Our analysis supporting this finding presents what we examined and discusses the following topics:

- Establishing marine protected areas
- Prohibitions in marine protected areas

Why this finding matters

2.30 This finding matters because marine protected areas are a way of protecting marine mammals from commercial fishing and marine traffic. Marine protected areas are especially useful for migratory species, as their protection will ultimately depend on a broader consideration of threats across an expanding network of these areas.

Context

2.31 Under the *Oceans Act*, Fisheries and Oceans Canada leads the development of a network of marine protected areas and can establish marine protected areas to meet various conservation objectives, including the protection of marine mammals and their habitats. Parks Canada and Environment and Climate Change Canada can also establish marine protected areas under other acts. Not all marine protected areas are established to specifically protect marine mammals. However, regardless of the objective, marine protected areas can protect key habitat areas for marine mammals—such as feeding, wintering, breeding, or resting areas, as well as migratory routes. Area-based conservation measures, such as fishery closures, can also be used to reduce threats to marine mammals.

2.32 Federal organizations can regulate activities within marine protected areas, to meet conservation objectives. Of the six acts governing marine protected areas, five provide organizations with the legal authority to restrict commercial fishing and vessel traffic within the marine protected areas. The *Fisheries Act* and the *Canada Shipping Act, 2001* can also be used to restrict activities within marine protected areas. These controls have specific limits, mainly involving national defence, security, safety, and law enforcement.

2.33 Canada has a total marine area of 5,750,000 square kilometres. The federal government has committed to the **Aichi Biodiversity Target** of conserving at least 10% of coastal and marine areas by 2020. Various types of area-based conservation measures contribute to the target, including marine protected areas, national marine conservation areas, national wildlife areas, migratory bird sanctuaries, national parks, and other effective area-based conservation measures.

Recommendation

2.34 Our recommendation in this area of examination appears at paragraph 2.42.

Analysis to support this finding

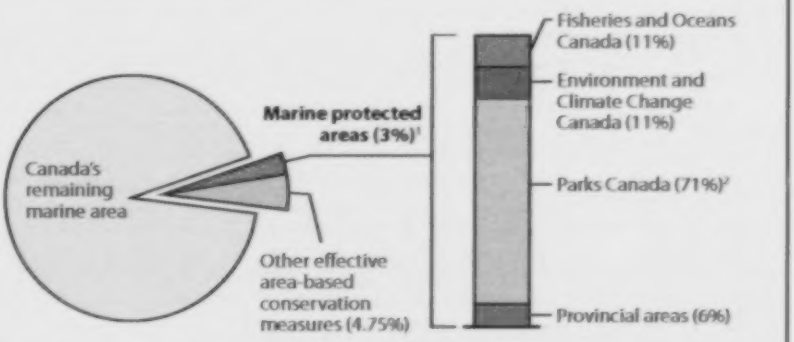
2.35 **What we examined.** We examined whether Fisheries and Oceans Canada, Environment and Climate Change Canada, and Parks Canada had established marine protected areas that protected marine mammals. We also examined whether prohibitions and limitations were implemented in marine protected areas to reduce threats posed by commercial fishing and marine traffic.

2.36 **Establishing marine protected areas.** We found that federal organizations did not have any criteria or guidance for considering the specific needs of marine mammals (such as large migratory ranges) when planning and managing marine protected areas. As a result, we found that measures to protect marine mammals were not consistently considered when marine protected areas were being established.

2.37 We found that marine protected areas covered about 3% of Canada's total marine area, while other area-based conservation measures (all were fishery closures) represented about 4.75%. Fisheries and Oceans Canada established 11% of the marine protected areas, while Environment and Climate Change Canada established 11%, and Parks Canada established 71%. We noted that provincial protected areas constituted 6% of the marine protected areas (Exhibit 2.2).

Aichi Biodiversity Targets—Targets aimed at reducing biodiversity loss at the global, regional, and national levels by 2020. These targets were developed under the United Nations' Convention on Biological Diversity, to which Canada is a party.

Exhibit 2.2 **Marine protected areas cover about 3% of Canada's total marine area**


Fisheries and Oceans Canada (11%)
Environment and Climate Change Canada (11%)
Parks Canada (71%)[2]
Provincial areas (6%)
Marine protected areas (3%)[1]
Canada's remaining marine area
Other effective area-based conservation measures (4.75%)

[1] An overlap of 1,342 square kilometres among areas is accounted for in this total.

[2] The Tallurutiup Imanga National Marine Conservation Area of 109,000 square kilometres is under interim protection and has not yet been established in legislation.

Note: Percentages have been rounded.

2.38 We found that 3 of the 11 marine protected areas established by Fisheries and Oceans Canada had a conservation objective to protect marine mammals. These 3 marine areas—established by the lead organization mandated to protect marine mammals—represented only about a third of the Department's total protected area. We also found that of the 34 fishery closures that counted toward the Aichi Biodiversity Target, only 2 were intended to protect marine mammals.

2.39 **Prohibitions in marine protected areas.** Prohibiting and limiting commercial fishing and commercial marine vessels in marine protected areas where marine mammals are found can contribute to their protection. For example, Parks Canada established a marine protected area with the Province of Quebec under the *Saguenay-St. Lawrence Marine Park Act* and corresponding provincial legislation. Regulations were put in place to protect marine mammals from threats posed by marine vessels, including regulations to control whale-watching activities, establish speed limits for vessels, and limit the number of vessel permits. Parks Canada also demonstrated that additional voluntary speed reductions could lead to a lower collision risk to marine mammals and reduced underwater noise. We noted that on 19 June 2018, subsequent to our audit period, the Saguenay–St. Lawrence Marine Park began to prohibit marine vessels from transiting within an area of the park during summer months.

2.40 We found that commercial fishing was prohibited in 17% of marine protected areas established by Fisheries and Oceans Canada, Environment and Climate Change Canada, and Parks Canada. We also found that commercial marine vessels were prohibited in 10% of marine protected areas. Exceptions were made for some commercial fishing and vessels by permit or public notices in some areas (Exhibit 2.3).

Exhibit 2.3 **Few prohibitions were implemented in marine protected areas**

Type of site	Area prohibiting commercial fishing (km^2)	Area prohibiting commercial marine vessels (km^2)	Total area (km^2)
Fisheries and Oceans Canada			
Marine protected areas	1,978	2	19,525
Parks Canada			
National marine conservation areas and reserves	106[1]	0	112,500[2]
Marine components of national parks and the Pingo Canadian Landmark	8,960[3]	0	9,236
Saguenay–St. Lawrence Marine Park	0	0	1,246
Environment and Climate Change Canada			
National wildlife areas	5,647[4]	5,647[5]	5,647
Migratory bird sanctuaries	10,811	10,811[6]	13,969
Total federal marine protected areas	27,502	16,460	162,123
Prohibition area as a percentage of total area	**17%**	**10%**	

[1] Prohibitions were implemented under the *Fisheries Act*.

[2] Total area includes the Tallurutiup Imanga National Marine Conservation Area.

[3] Commercial fishing by individual Inuit was allowed.

[4] Commercial fishing was allowed by permit.

[5] Tourism vessels were allowed by permit.

[6] Tourism vessels were allowed by permit in Nunavut only.

2.41 In the three marine protected areas established by Fisheries and Oceans Canada to meet the conservation objective of protecting marine mammals, we found few prohibitions to threats pertaining to marine vessels and commercial fishing:

- The Gully Marine Protected Area on the east coast prohibited all fishing in 25% of the area, while fishing was just limited in the rest of the marine protected area. Marine vessels had no limitations.
- The Tarium Niryutait Marine Protected Area in the arctic had no limitations on commercial fishing or marine vessels.
- The Anguniaqvia niqiqyuam Marine Protected Area, also in the arctic, prohibited bottom trawling in the entire marine protected area. Commercial fishing had no other limitations, and marine vessels had no limitations.

2.42 **Recommendation.** Fisheries and Oceans Canada, Parks Canada, and Environment and Climate Change Canada, with participation from Transport Canada, should work together to

- consider and document marine mammal protection when planning and establishing marine protected areas; and
- develop an approach for reducing threats to marine mammals posed by commercial fishing and marine traffic in marine protected areas, when managing these activities collaboratively.

The four organizations' response. *Agreed. Fisheries and Oceans Canada, Parks Canada, Transport Canada, and Environment and Climate Change Canada will build on existing programs and policies and continue to collaborate to implement measures to reduce threats and protect marine mammals. The departments and agency note that achieving protection of marine mammals in Canada requires action and support across all sectors, all government levels, and Indigenous peoples.*

Fisheries and Oceans Canada's response. *Agreed. Fisheries and Oceans Canada is committed to protecting and conserving Canada's oceans, including significant ecological species such as marine mammals and their habitats. The Department will collaborate on implementing measures to protect marine mammals, including threat reduction through developing networks of marine protected areas and other effective area-based conservation measures. These networks will include marine protected areas established under the* Oceans Act *and marine refuges established under the* Fisheries Act*, as well as other departments' conservation tools.*

When marine mammals are identified as an ecologically and biologically significant component in areas of interest for proposed designation as an Oceans Act *Marine Protected Area, they will be included in the conservation objectives developed for the area of interest. Also, the design of the* Oceans Act *Marine Protected Area (boundaries and allowed or prohibited activities) will focus on their protection.*

Implementation of measures is under way and will continue, to the extent possible, as marine protected areas are identified, established, and managed.

Parks Canada's response. *Agreed. Parks Canada protects and conserves representative areas of Canada's oceans, which may include important marine mammal habitats. The Agency will build on its marine protected area management process to reduce threats to marine mammals throughout its protected areas.*

Transport Canada's response. *Agreed. As a core part of its mandate, Transport Canada is committed to developing and overseeing transportation networks that are green and innovative, which includes reducing the impacts of vessel traffic on marine ecosystems. Building on measures recently announced as part of the Government of Canada's Whales Initiative for the protection of endangered marine mammals,*

Transport Canada will identify and implement measures to mitigate the harmful effects of vessel traffic, including restrictions on vessel operations in marine protected areas as required.

Environment and Climate Change Canada's response. *Agreed. Environment and Climate Change Canada protects and conserves nationally significant habitats and wildlife, especially migratory birds. These habitats and wildlife may include marine mammals and important habitats for them in Canada's oceans. Through its collaborative management and planning approach, Environment and Climate Change Canada will include threat reduction measures in its protected areas and other protection tools, such as vessel navigation restrictions.*

Reducing threats to marine mammals

Fisheries and Oceans Canada did not fully apply the available tools and policies to proactively reduce the threat of commercial fishing but did implement recent measures

What we found

2.43 We found that up to and including the 2017 fishing season, Fisheries and Oceans Canada had not adequately considered most marine mammals when managing commercial fish stocks in Canada. In 2018, the Department implemented a number of measures, including mandatory reporting on marine mammal interaction with commercial fisheries and measures to reduce the threat of commercial fisheries to the North Atlantic right whale and the southern resident killer whale.

2.44 Our analysis supporting this finding presents what we examined and discusses the following topics:

- Implementing the Policy on Managing Bycatch
- Overseeing marine mammal interactions with aquaculture
- Food sources for the southern resident killer whale

Why this finding matters

2.45 This finding matters because some commercial fishing activities can harm marine mammals. Furthermore, the United States' ***Marine Mammal Protection Act*** gives Canada until January 2022 to address bycatch and entanglement of marine mammals as new conditions on Canadian fishery exports to the United States. If Canada cannot satisfactorily meet the United States' expectations, Canadian access to American markets may be affected.

Marine Mammal Protection Act—A United States act that protects the country's marine mammals. Passed in 1972, the Act has provisions to protect marine mammals from several threats, such as bycatch, entanglement, and disturbance.

Context

2.46 Commercial fishing is important to the Canadian economy and can take place in areas where marine mammals feed, migrate, and breed. Marine mammals can get entangled in fishing gear and aquaculture pens, or become bycatch. Also, commercial fisheries sometimes catch the same species that marine mammals eat, depleting their food sources.

2.47 The management of fish stocks in Canada is guided by the Sustainable Fisheries Framework. This framework is implemented through integrated fisheries management plans, which are meant to ensure the conservation and sustainable use of marine resources, including marine mammals.

Recommendation

2.48 Our recommendation in this area of examination appears at paragraph 2.56.

Analysis to support this finding

2.49 **What we examined.** We examined whether Fisheries and Oceans Canada had identified and implemented measures to reduce the threats to marine mammals from commercial fishing, such as bycatch, entanglements, and the depletion of food sources.

2.50 **Implementing the Policy on Managing Bycatch.** Fisheries and Oceans Canada currently manages 170 major fish stocks under the guidance of the Sustainable Fisheries Framework. In 2013, the Department launched the Policy on Managing Bycatch to reduce bycatch from fisheries, including bycatch and entanglement of marine mammals. The policy requires that bycatch and entanglement be identified along with measures to reduce these threats in the integrated fisheries management plans for each fish stock. The Department identified 74 fish stocks that posed a risk of bycatch and entanglement for marine mammals. We found that for the 2017 fishing season, only 8 of these fish stocks had measures related to marine mammal bycatch or entanglement in their management plans.

2.51 In our review of all of the 39 fishing licences issued for those 8 fish stocks, we found that some measures outlined in the management plans were expressed in the licence conditions. Examples of measures required in these fishing licences included reporting (in logbooks) on fishing activities' interactions with marine mammals, area closures to protect marine mammal habitats, and modified fishing seasons to avoid when whales are present. However, other important management measures, such as gear modifications to limit the amount of rope in the water (which reduces the risk of entanglement) were voluntary and, as such, did not appear in licences. In our view, the Policy on Managing Bycatch was not effectively implemented to protect marine mammals.

2.52 We noted that for the 2018 fishing season, the Department was requiring all commercial fisheries to report on all fishery interactions with

marine mammals. We also noted that in response to the summer 2017 deaths of 12 North Atlantic right whales in the Gulf of St. Lawrence, the Department had begun to implement the following measures:

- gear modifications and restrictions in the Gulf of St. Lawrence for the snow crab, lobster, rock crab, winter flounder, toad crab, whelk, and Atlantic halibut fisheries;
- dynamic and static fishery closures in the Gulf of St. Lawrence for snow crab, mackerel, rock crab, winter flounder, toad crab, lobster, whelk, Greenland halibut, and Atlantic halibut; and
- improved tracking of gear and mandatory reporting of lost gear.

However, we did not audit these measures because their implementation was under way at the end of our audit period.

2.53 **Overseeing marine mammal interactions with aquaculture.** In British Columbia, marine mammal interactions with finfish aquaculture are managed through marine mammal interaction management plans. These plans are developed by industry and submitted to Fisheries and Oceans Canada. We found that the Department had limited oversight of the development of these plans. On the east coast, Fisheries and Oceans Canada officials told us that aquaculture had little interaction with marine mammals, due to the location of the fish pens in shallow water. As such, the Department did not collect data on marine mammal interactions with aquaculture and did not know the extent to which marine mammal entanglement occurred in aquaculture pens on the east coast.

2.54 **Food sources for the southern resident killer whale.** The southern resident killer whale has been listed as an endangered species since 2003. The population, standing at 76 whales at the time of the audit, is threatened by human activities such as vessel noise and disturbance, depletion of food sources, and environmental contamination. Fisheries and Oceans Canada identified the scarcity of Chinook salmon as a threat to the recovery of the whale population in its 2008 recovery strategy, its updated 2011 recovery strategy, and its 2017 action plan. The integrated fisheries management plans for the 2017 fishing season for salmon stocks in British Columbia identified Chinook salmon as the primary food source for the southern resident killer whale and stated that salmon fisheries could be affecting the whales' population by reducing Chinook salmon abundance. However, we found that these management plans did not identify any direct measures to reduce the threat of food scarcity, such as reducing quotas.

2.55 At the end of our audit period, we noted that the Department had begun to implement harvest reductions and area closures to address the scarcity of Chinook salmon to support the recovery of the southern resident killer whale. These measures were announced on 5 July 2018, subsequent to our audit period, in the integrated fisheries management plans for salmon on the west coast.

2.56 **Recommendation.** Fisheries and Oceans Canada should implement the Policy on Managing Bycatch and ensure that integrated fisheries management plans include the following:

- a description of potential interactions with all marine mammals, including but not limited to entanglement, bycatch, and reduced prey availability;
- specific measures that would reduce potential marine mammal interactions with commercial fishing;
- measures to be applied in licence conditions to reduce the effects of commercial fishing on marine mammals; and
- a regular assessment of the effectiveness of implemented measures.

Fisheries and Oceans Canada's response. *Agreed. Fisheries and Oceans Canada is committed to protecting and conserving marine mammals in Canadian waters. Building on its existing programs and policies, the Department will continue its work to update integrated fisheries management plans with the appropriate information, such as the specific protection measures including gear modifications, dynamic closures of fishing areas, and mandatory reporting of lost gear. These measures were announced by the Government of Canada in March 2018 and put in place in time for the 2018 fishing season. These measures were also included in 2018 management plans. To support the implementation of Sustainable Fisheries Framework policies, such as the Policy on Managing Bycatch, the government made significant investments in Budget 2017, which are enabling an accelerated pace of implementation.*

Implementation began in 2018 and is ongoing.

Federal organizations began to take steps to reduce threats from marine traffic

What we found

2.57 We found that Fisheries and Oceans Canada had not finalized amendments to the *Marine Mammal Regulations*, proposed in 2012, that would have protected marine mammals from noise and disturbance.

2.58 **Subsequent event.** Fisheries and Oceans Canada subsequently finalized amendments to the *Marine Mammal Regulations*, under the *Fisheries Act*. These amendments came into effect on 11 July 2018 and aim to protect marine mammals from noise and disturbance from marine vessels. The amendments include a definition of disturbance and establish safe distances between aerial craft, marine vessels, and marine mammals.

2.59 We also found that Fisheries and Oceans Canada, Transport Canada, and Environment and Climate Change Canada had limited collaboration on implementing measures to reduce threats from marine vessels (for example, collisions with marine vessels, and noise and disturbance). Also, marine mammals were not explicitly included in the National Oil Spill

Preparedness and Response Regime. However, we found that collaboration to address marine vessels' threats to the southern resident killer whale and the North Atlantic right whale had improved since the announcement of the Oceans Protection Plan in late 2016.

2.60 Our analysis supporting this finding presents what we examined and discusses the following topics:

- Measures to reduce threats from marine vessels
- Collaborating to protect the southern resident killer whale and North Atlantic right whale

Why this finding matters

2.61 This finding matters because the threats of underwater noise and disturbance from vessels, collisions, and oil spills could impede the recovery or speed the decline of marine mammal populations, if the threats are not adequately addressed. As Canada's economy grows, the increase in marine traffic will intensify threats to marine mammals.

Context

2.62 A wide variety of marine vessels use waters under the jurisdiction of Canada, including commercial cargo, passenger, fishing, whale-watching, and Canadian Coast Guard vessels. Except for military vessels, all of these marine vessels are regulated by either Transport Canada or Fisheries and Oceans Canada. High-traffic areas can overlap with the habitat of marine mammals, and underwater noise and disturbance can disrupt their communication and feeding. Vessels can also cause injuries or death through collisions. In addition, oil spills can directly affect marine mammals and their habitats.

2.63 Measures such as speed reductions and routing changes can be used to reduce these threats. For example, Transport Canada, with support from the International Maritime Organization, moved vessel routes in the Bay of Fundy in 2003 to avoid areas frequented by North Atlantic right whales.

2.64 Under the *Oceans Act*, Fisheries and Oceans Canada is required to collaborate with other federal organizations to develop and implement integrated oceans management plans for the sustainable development of Canada's oceans. Reducing threats posed by marine vessels to marine mammals requires the collaboration of organizations, including Fisheries and Oceans Canada, Transport Canada, and Environment and Climate Change Canada.

Recommendation

2.65 Our recommendation in this area of examination appears at paragraph 2.71.

Analysis to support this finding

2.66 **What we examined.** We examined whether Fisheries and Oceans Canada, including the Canadian Coast Guard, in collaboration with Environment and Climate Change Canada and Transport Canada, implemented measures to reduce threats to marine mammals from collisions with marine vessels, oil spills, and underwater noise and disturbance.

2.67 **Measures to reduce threats from marine vessels.** We found that Fisheries and Oceans Canada had yet to approve amendments proposed in 2012 to the *Marine Mammal Regulations*, which would require vessels, particularly whale-watching vessels, to maintain a safe distance from marine mammals. The Department has publicly recognized that these amendments would help to address the harassment of marine mammals, by specifying the distances and what constitutes a disturbance. Several of the Department's recovery strategies and action plans for marine mammals included measures to finalize the proposed amendments. Subsequent to our audit work, amendments to the *Marine Mammal Regulations* were finalized by Fisheries and Oceans Canada and came into effect on 11 July 2018.

2.68 We also found that Transport Canada, Fisheries and Oceans Canada, and Environment and Climate Change Canada did not explicitly consider marine mammals in the National Oil Spill Preparedness and Response Regime. They did not do so despite this measure being proposed in recovery strategies and action plans for many endangered and threatened marine mammals since 2006.

2.69 We found that integrated oceans management plans, developed under the *Oceans Act*, cited marine vessels as a threat to marine mammals and that most plans identified collaboration as a key priority. We also found that from 2012 to 2016, Fisheries and Oceans Canada and Transport Canada had limited collaboration on implementing measures to address the threats to marine mammals of underwater noise and disturbance, and collisions. In 2017, 12 North Atlantic right whales were found dead in Canadian waters. Fisheries and Oceans Canada reported that 5 of the deaths were likely due to collisions with marine vessels.

2.70 **Collaborating to protect the southern resident killer whale and North Atlantic right whale.** We found that Fisheries and Oceans Canada and Transport Canada had started their collaboration by sharing information on the threats from marine vessels for two whales: the southern resident killer whale and the North Atlantic right whale. For example, the 2017 mandatory vessel slowdown in the Gulf of St. Lawrence demonstrated that the departments, including the Canadian Coast Guard, could collaborate effectively on implementing measures to reduce the threat of collisions with marine vessels to the endangered North Atlantic right whale (Exhibit 2.4). We noted that in spring 2018, the departments had begun to implement measures to address threats

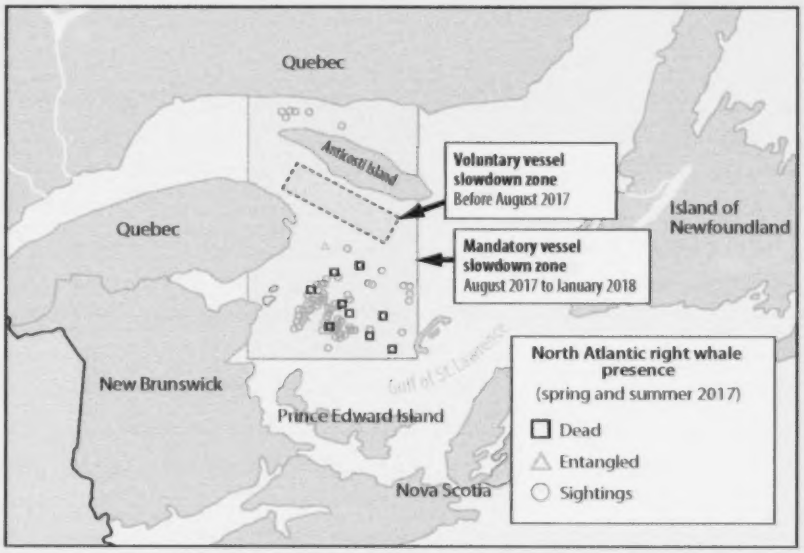
from marine vessels for the North Atlantic right whale. However, we did not audit these measures because their implementation was under way at the end of our audit period.

Exhibit 2.4 **Fisheries and Oceans Canada and Transport Canada worked together to implement a vessel slowdown to protect the North Atlantic right whale in 2017**

In late spring 2017, Fisheries and Oceans Canada confirmed the presence of numerous North Atlantic right whales in the Gulf of St. Lawrence, including several carcasses. After examining with partners the first three dead whales, Fisheries and Oceans Canada officials approached Transport Canada to propose slowing vessels down to 10 knots, to reduce the likelihood and severity of collisions with North Atlantic right whales in the area.

Fisheries and Oceans Canada, including the Canadian Coast Guard, worked together with Transport Canada to implement a voluntary vessel slowdown in a small area of the Gulf of St. Lawrence, south of Anticosti Island, Quebec. However, after increased sightings of both live and dead whales, the departments decided in August 2017 to implement a mandatory speed limit in a larger area, for all vessels longer than 20 metres. The slowdown remained in effect until January 2018.

Fisheries and Oceans Canada monitored the presence, health, and causes of mortality of the whales. The Canadian Coast Guard communicated with vessels in the slowdown zone and monitored vessel speeds, passing information to Transport Canada, which in turn enforced the regulations and imposed fines when necessary.



Source: Adapted from Fisheries and Oceans Canada data and graphics

2.71 **Recommendation.** Fisheries and Oceans Canada, including the Canadian Coast Guard, in collaboration with Transport Canada and Environment and Climate Change Canada, should implement measures that will protect marine mammals from the threats posed by marine vessels. The departments should also periodically evaluate the measures' effectiveness.

Fisheries and Oceans Canada's response. *Agreed. Fisheries and Oceans Canada will continue to work cooperatively with our partners, including Transport Canada and Environment and Climate Change Canada, to review, assess, and recommend the implementation of measures to address threats posed by marine vessels to marine mammals. Fisheries and Oceans Canada plays an important role in the evaluation of measures to determine the sufficiency and efficacy of measures to address threats from marine vessels for the protection of marine mammals. Fisheries and Oceans Canada will continue to build on Government of Canada investments in the Oceans Protection Plan, including measures to reduce impacts to marine mammals from marine vessels. The Canadian Coast Guard will continue to work cooperatively within the parameters of its mandate to support measures to address threats from marine vessels for the protection of marine mammals.*

Implementation of measures is under way and will continue, to the extent possible, as potential impacts to marine mammals from marine vessels are identified and assessed.

Transport Canada's response. *Agreed. Transport Canada will continue to work with Fisheries and Oceans Canada, including the Canadian Coast Guard, and with Environment and Climate Change Canada to review, assess, and implement measures for the protection of marine mammals from threats posed by marine traffic.*

As part of funding received under the Oceans Protection Plan's commitment to stronger ecosystem conservation, Transport Canada, Fisheries and Oceans Canada, and Environment and Climate Change Canada have developed the Whales Initiative. This initiative, announced publicly on 22 June 2018, provides an additional $167.4 million to support specific measures for the protection and recovery of endangered whale species in Canada.

Under this initiative and over the course of the coming year, Transport Canada will assess and implement measures to both mitigate the impacts of underwater noise on whales (including the southern resident killer whale and St. Lawrence Estuary beluga whale) and reduce the likelihood and impact of vessel strikes on other marine mammals (including the North Atlantic right whale).

Environment and Climate Change Canada's response. *Agreed. Environment and Climate Change Canada does consider the impact and risks that oil spills from ships can have on marine mammals and includes these considerations when advising the Canadian Coast Guard during oil spill response. Environment and Climate Change Canada currently advises the Canadian Coast Guard about the priority "resources at risk" or species and habitats that could be at greatest risk from spilled oil. Environment and Climate Change Canada now collaborates with Fisheries and Oceans Canada scientists, who are the experts on marine*

mammals, through the Science Table to provide the best scientific advice to the Canadian Coast Guard. However, the procedures for ensuring a consistent exchange of marine mammal information between federal departments is not well documented.

Where they are not already defined, Environment and Climate Change Canada will formalize its role and the roles of other government organizations in the emergency response to marine oil spills as well as the measures for protecting the environment, including marine mammals.

Supporting distressed marine mammals

Fisheries and Oceans Canada's support for distressed marine mammals was insufficient

What we found

2.72 We found that Fisheries and Oceans Canada did not provide the necessary national guidance or departmental support to its partners to respond to distressed marine mammals through its Marine Mammal Response Program. Since March 2018, the Department has initiated improvements to the program.

2.73 Our analysis supporting this finding presents what we examined and discusses the following topics:

- National guidance on responding to distressed marine mammals
- Response capacity

Why this finding matters

2.74 This finding matters because Fisheries and Oceans Canada is responsible for assisting marine mammals in distress. Every year, marine mammals are subject to incidents such as entanglements in fishing gear, strandings, collisions with marine vessels, and oil spills. Marine mammals can also be found dead or beached. Distressed marine mammals garner a lot of public interest in Canada. Failure to adequately support responses to distressed marine mammals could further endanger these animals and those working to protect them, and affect Canada's reputation in wildlife protection.

Context

2.75 In 2006, Fisheries and Oceans Canada established the Marine Mammal Response Program to support responses to distressed mammals. On the west coast, the Department responds to calls directly. On the east coast, it supports a network of third-party responders. This network was established by contracting regional non-governmental and conservation organizations, which have the knowledge to respond to entanglements and strandings, look at causes of death, and assist marine mammals in distress.

Recommendation

2.76 Our recommendation in this area of examination appears at paragraph 2.82.

Analysis to support this finding

2.77 **What we examined.** We examined whether the Marine Mammal Response Program adequately responded to distressed marine mammals.

2.78 **National guidance on responding to distressed marine mammals.** Since 2008, Canadians have reported, on average, 889 incidents of marine mammals in distress each year. The Marine Mammal Response Program divided an annual budget of $300,000 among the six regions and their partners. We found that the partners had no national guidance for responding to the variety of incidents. We also found that each partner developed its own protocol for responding to marine mammals in distress on the basis of its expertise and priorities. The separate protocols led to inconsistent responses, which in turn led to a lack of clarity about the roles and responsibilities of the Department and its partners.

Disentanglement of a whale near Newfoundland and Labrador

Photo: Wayne Ledwell/Whale Release and Strandings. Reproduced with permission. All rights reserved.

Disentanglement of a whale near Newfoundland and Labrador

Photo: Wayne Ledwell/Whale Release and Strandings. Reproduced with permission. All rights reserved.

2.79 Each region provided incident reports to national headquarters. We found that incident reporting was inconsistent among regions. Our review of departmental data demonstrated the challenges of clear reporting, such as the lack of established names for the species or the types of incidents. Moreover, national reporting focused on the outcomes of the program in some years, and only on species at risk in others. In our view, consistent reporting on the incidents affecting marine mammals would allow a better understanding of measures that could be used to protect them.

2.80 **Response capacity.** We found that Fisheries and Oceans Canada officers often lacked the appropriate training to support partners that respond to marine mammal incidents, such as strandings, entanglements, and marine mammal deaths. We also found that in 2018, only five experts were able to lead disentanglements of large whales from fishing gear in Canada: one expert was a Fisheries and Oceans Canada official, while the other four worked for conservation groups and non-governmental organizations. Responding to entangled large whales required extensive travel, equipment, and a trained team. In our view, the inconsistent approach and limited capacity presented risks for both the distressed marine mammals and the responding partners.

2.81 In March 2018, the federal government announced an increase in the Marine Mammal Response Program budget to $1 million annually. We noted that the Department had begun to engage third-party responders to improve the program. However, we did not audit these engagements because they were under way at the end of the audit period.

2.82 **Recommendation.** Fisheries and Oceans Canada should

- develop a national approach for responding to distressed marine mammals;
- clarify the roles and responsibilities, including leadership, for delivering the Marine Mammal Response Program;
- review the current response capacity and training needs in each region; and
- develop a consistent reporting mechanism.

Fisheries and Oceans Canada's response. *Agreed. While Fisheries and Oceans Canada agrees in principle with the recommendation, the recommendation does not fully reflect the significant increases in funding and program modernization, which, as noted in the audit, occurred during the final year of the audit period (that is, up to 1 June 2018). In March 2018, the Government of Canada announced $1 million in annual ongoing funding to support third-party responder groups in doing their critical work. In addition, $4.5 million in separate funds has been set aside over three years to support a new capacity of third-party responder groups to respond to incidents when they occur. This funding will include money for equipment and training for existing and new partners.*

Further, through collaboration and consultation with international experts including the Canadian third-party responder groups, a national protocol for response was developed in 2017 with clearly defined roles and responsibilities and reporting requirements. These approaches have been developed in a manner that provides national coherence while recognizing the unique geographic differences on the coasts, the specific entanglement and animal involved, and responder expertise. Implementation of these measures began in 2017 and is well under way.

Fisheries and Oceans Canada has also significantly invested in the training of its fishery officers since 2009 in order for them to support experts in a safe and timely manner when responding to marine mammal incidents. Under the Oceans Protection Plan, Fisheries and Oceans Canada received an additional $1 million to further train and equip its officers. A training curriculum has been established on the basis of advice received from international experts. Procedures are also in place to guide the officers' work during operations.

Implementation began prior to June 2018.

Conclusion

2.83 We concluded that Fisheries and Oceans Canada, in collaboration with Parks Canada, Transport Canada, and Environment and Climate Change Canada, had not adequately protected marine mammals from threats posed by marine vessels and commercial fishing.

2.84 At the end of our audit period, these federal organizations had begun to implement measures to reduce threats from commercial fishing and marine vessels. These measures suggest a change in approach that could reduce threats to the southern resident killer whale, the North Atlantic right whale, and the St. Lawrence Estuary beluga whale.

About the Audit

This independent assurance report was prepared by the Office of the Auditor General of Canada on the protection of marine mammals from threats posed by commercial fishing and marine traffic. Our responsibility was to provide objective information, advice, and assurance to assist Parliament in its scrutiny of the government's management of resources and programs, and to conclude on whether the protection of marine mammals from commercial fishing and marine traffic complied in all significant respects with the applicable criteria.

All work in this audit was performed to a reasonable level of assurance in accordance with the Canadian Standard for Assurance Engagements (CSAE) 3001—Direct Engagements set out by the Chartered Professional Accountants of Canada (CPA Canada) in the CPA Canada Handbook—Assurance.

The Office applies Canadian Standard on Quality Control 1 and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

In conducting the audit work, we have complied with the independence and other ethical requirements of the relevant rules of professional conduct applicable to the practice of public accounting in Canada, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality, and professional behaviour.

In accordance with our regular audit process, we obtained the following from entity management:

- confirmation of management's responsibility for the subject under audit;
- acknowledgement of the suitability of the criteria used in the audit;
- confirmation that all known information that has been requested, or that could affect the findings or audit conclusion, has been provided; and
- confirmation that the audit report is factually accurate.

Audit objective

The objective of this audit was to determine whether Fisheries and Oceans Canada, Transport Canada, Parks Canada, and Environment and Climate Change Canada had adequately protected marine mammals from the threats posed by marine traffic and commercial fishing.

Scope and approach

The audit focused on the protection of marine mammals from the threats posed by marine traffic and commercial fishing, including entanglements, bycatch, depletion of food sources, collisions with vessels, oil spills, and chronic underwater noise and disturbance in waters under Canadian jurisdiction. The audit examined the measures that Fisheries and Oceans Canada, Parks Canada, Transport Canada, and Environment and Climate Change Canada had implemented to protect marine mammals from marine traffic and commercial fishing. We did not consider the impact of international obligations, except where they were incorporated into Canada's domestic law.

In 2015, Canada signed on to the United Nations' sustainable development goals (SDGs), with the aim of supporting sustainable development globally and taking action nationally. For example, Canada is committed to achieving the SDG goal of Life Below Water (Goal 14): Conserve and sustainably use the oceans, seas and marine resources. This goal includes the following targets:

- to sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts by 2020 (target 14.2), and
- to conserve at least 10% of coastal and marine areas by 2020 (target 14.5).

The federal government has also committed to the Aichi Biodiversity Targets, including the prevention of the extinction of species known to be threatened, and improving and sustaining their conservation status by 2020, particularly for those most in decline.

We interviewed responsible officials and external stakeholders, and undertook discussions on the west and east coasts. We also reviewed documentation and examined legislative and regulatory processes.

The audit focused on threats that have a higher likelihood and larger potential effects on marine mammals. Accordingly, the following were not in the scope of the audit:

- pleasure craft, as defined in the *Canada Shipping Act, 2001*;
- the effects of pollution from marine vessels (including ballast water and invasive species), except for oil spills; and
- the harvest of marine mammals, as referenced in the *Marine Mammal Regulations*, under the *Fisheries Act*.

The audit scope also did not include the process for listing species in Schedule 1 of the *Species at Risk Act*, including "do not list" decisions.

Criteria

Criteria	Sources
To determine whether Fisheries and Oceans Canada, Transport Canada, Parks Canada, and Environment and Climate Change Canada had adequately protected marine mammals from the threats posed by marine traffic and commercial fishing, we used the following criteria:	
Fisheries and Oceans Canada, Transport Canada, Environment and Climate Change Canada, and Parks Canada have implemented measures to adequately protect marine mammals from the threats[1] posed by marine vessels.[2]	• *Canada Shipping Act, 2001* • *Fisheries Act* • *Oceans Act* • *Species at Risk Act* • *Canada Wildlife Act* • *Canada National Marine Conservation Areas Act* • *Saguenay-St. Lawrence Marine Park Act*

[1] Threats from marine vessels included in the audit are oil spills, ship strikes, noise, and disturbance.

[2] "Marine vessels" refers to commercial shipping and fishing vessels, cruise ships, tankers, ferries, and whale-watching vessels.

Criteria	Sources
To determine whether Fisheries and Oceans Canada, Transport Canada, Parks Canada, and Environment and Climate Change Canada had adequately protected marine mammals from the threats posed by marine traffic and commercial fishing, we used the following criteria: (continued)	
Fisheries and Oceans Canada, Parks Canada, and Environment and Climate Change Canada have implemented measures to adequately protect marine mammals from the threats[3] posed by commercial fishing activities.	• *Fisheries Act* • *Oceans Act* • *Canada Wildlife Act* • *Species at Risk Act* • Minister of Fisheries, Oceans and the Canadian Coast Guard Mandate Letter, 2015 • *Canada National Marine Conservation Areas Act* • *Saguenay–St. Lawrence Marine Park Act*

[3] Threats included in the audit are entanglements from fishing gear, bycatch from commercial fisheries, and capture and removal of prey species by commercial fisheries.

Period covered by the audit

The audit covered the period between 1 January 2012 and 1 June 2018. This is the period to which the audit conclusion applies. However, for some matters, the audit period was shorter. We also examined certain matters that preceded 1 January 2012 to gain a more complete understanding of the subject matter of the audit.

Date of the report

We obtained sufficient and appropriate audit evidence on which to base our conclusion on 26 June 2018, in Ottawa, Canada.

Audit team

Principal: Kimberley Leach
Director: Elsa Da Costa

Jean-Pascal Faubert
Nicole Hutchinson
Natacha Kramski
Caron Mervitz

List of Recommendations

The following table lists the recommendations and responses found in this report. The paragraph number preceding the recommendation indicates the location of the recommendation in the report, and the numbers in parentheses indicate the location of the related discussion.

Recommendation	Response
Recovery measures for endangered and threatened marine mammals	
2.27 Fisheries and Oceans Canada, working with its partners, should implement the recovery measures identified in its action plans within the established time frames to reduce the threats to endangered and threatened marine mammals posed by commercial fishing and marine traffic. The Department should also report on the effectiveness of these measures five years after the approval of the action plans. **(2.21–2.26)**	**Fisheries and Oceans Canada's response.** Agreed. Fisheries and Oceans Canada will work, to the extent feasible, within the confines of partner willingness and available resources to implement the recovery measures identified in species at risk action plans to reduce the threats faced by marine mammals from commercial fishing activities and marine vessels. Efforts will be made to implement actions consistent with time frames established in the action plans. These action plans will be revisited in the event that it is not possible for the Department to implement or commit to the measures. Reporting on the progress of implementation of recovery actions will occur five years after approval of the action plan as required under the *Species at Risk Act*. This report will include an evaluation of the effectiveness of the implemented measures toward reducing the threats associated with commercial fishing activities and marine vessels and toward advancing recovery of the populations, where data to support such an evaluation is available. Given the long generation time of most marine mammals and the need for ongoing monitoring and new scientific information in order to assess effectiveness, demonstrating progress on effectiveness of actions could, in many cases, require time frames longer than five years. Implementation of many recovery actions is already under way and will continue. Fisheries and Oceans Canada will review outstanding recovery measures related to reducing threats to threatened and endangered marine mammals from commercial fishing and marine traffic. The Department will also develop a plan with priorities, targets, and timelines to implement these measures, to the extent possible, working with partners and available resources. A plan will be developed by the end of the 2018–19 fiscal year. Reporting on progress against action plans will be conducted in five-year intervals as required under the *Species at Risk Act*.

Recommendation	Response
Marine protected areas	
2.42 Fisheries and Oceans Canada, Parks Canada, and Environment and Climate Change Canada, with participation from Transport Canada, should work together to • consider and document marine mammal protection when planning and establishing marine protected areas; and • develop an approach for reducing threats to marine mammals posed by commercial fishing and marine traffic in marine protected areas, when managing these activities collaboratively. **(2.36–2.41)**	**The four organizations' response.** Agreed. Fisheries and Oceans Canada, Parks Canada, Transport Canada, and Environment and Climate Change Canada will build on existing programs and policies and continue to collaborate to implement measures to reduce threats and protect marine mammals. The departments and agency note that achieving protection of marine mammals in Canada requires action and support across all sectors, all government levels, and Indigenous peoples. **Fisheries and Oceans Canada's response.** Agreed. Fisheries and Oceans Canada is committed to protecting and conserving Canada's oceans, including significant ecological species such as marine mammals and their habitats. The Department will collaborate on implementing measures to protect marine mammals, including threat reduction through developing networks of marine protected areas and other effective area-based conservation measures. These networks will include marine protected areas established under the *Oceans Act* and marine refuges established under the *Fisheries Act*, as well as other departments' conservation tools. When marine mammals are identified as an ecologically and biologically significant component in areas of interest for proposed designation as an *Oceans Act* Marine Protected Area, they will be included in the conservation objectives developed for the area of interest. Also, the design of the *Oceans Act* Marine Protected Area (boundaries and allowed or prohibited activities) will focus on their protection. Implementation of measures is under way and will continue, to the extent possible, as marine protected areas are identified, established, and managed. **Parks Canada's response.** Agreed. Parks Canada protects and conserves representative areas of Canada's oceans, which may include important marine mammal habitats. The Agency will build on its marine protected area management process to reduce threats to marine mammals throughout its protected areas. **Transport Canada's response.** Agreed. As a core part of its mandate, Transport Canada is committed to developing and overseeing transportation networks that are green and innovative, which includes reducing the impacts of vessel traffic on marine ecosystems. Building on measures recently announced as part of the Government of Canada's Whales Initiative for the protection of endangered marine mammals, Transport Canada will identify and implement measures to mitigate the harmful effects of vessel traffic, including restrictions on vessel operations in marine protected areas as required.

Recommendation	Response
	Environment and Climate Change Canada's response. Agreed. Environment and Climate Change Canada protects and conserves nationally significant habitats and wildlife, especially migratory birds. These habitats and wildlife may include marine mammals and important habitats for them in Canada's oceans. Through its collaborative management and planning approach, Environment and Climate Change Canada will include threat reduction measures in its protected areas and other protection tools, such as vessel navigation restrictions.
Reducing threats to marine mammals	
2.56 Fisheries and Oceans Canada should implement the Policy on Managing Bycatch and ensure that integrated fisheries management plans include the following: • a description of potential interactions with all marine mammals, including but not limited to entanglement, bycatch, and reduced prey availability; • specific measures that would reduce potential marine mammal interactions with commercial fishing; • measures to be applied in licence conditions to reduce the effects of commercial fishing on marine mammals; and • a regular assessment of the effectiveness of implemented measures. **(2.50–2.55)**	**Fisheries and Oceans Canada's response.** Agreed. Fisheries and Oceans Canada is committed to protecting and conserving marine mammals in Canadian waters. Building on its existing programs and policies, the Department will continue its work to update integrated fisheries management plans with the appropriate information, such as the specific protection measures including gear modifications, dynamic closures of fishing areas, and mandatory reporting of lost gear. These measures were announced by the Government of Canada in March 2018 and put in place in time for the 2018 fishing season. These measures were also included in 2018 management plans. To support the implementation of Sustainable Fisheries Framework policies, such as the Policy on Managing Bycatch, the government made significant investments in Budget 2017, which are enabling an accelerated pace of implementation. Implementation began in 2018 and is ongoing.
2.71 Fisheries and Oceans Canada, including the Canadian Coast Guard, in collaboration with Transport Canada and Environment and Climate Change Canada, should implement measures that will protect marine mammals from the threats posed by marine vessels. The departments should also periodically evaluate the measures' effectiveness. **(2.67–2.70)**	**Fisheries and Oceans Canada's response.** Agreed. Fisheries and Oceans Canada will continue to work cooperatively with our partners, including Transport Canada and Environment and Climate Change Canada, to review, assess, and recommend the implementation of measures to address threats posed by marine vessels to marine mammals. Fisheries and Oceans Canada plays an important role in the evaluation of measures to determine the sufficiency and efficacy of measures to address threats from marine vessels for the protection of marine mammals. Fisheries and Oceans Canada will continue to build on Government of Canada investments in the Oceans Protection Plan, including measures to reduce impacts to marine mammals from marine vessels. The Canadian Coast Guard will continue to work cooperatively within the parameters of its mandate to support measures to address threats from marine vessels for the protection of marine mammals. Implementation of measures is under way and will continue, to the extent possible, as potential impacts to marine mammals from marine vessels are identified and assessed.

Recommendation	Response
	Transport Canada's response. Agreed. Transport Canada will continue to work with Fisheries and Oceans Canada, including the Canadian Coast Guard, and with Environment and Climate Change Canada to review, assess, and implement measures for the protection of marine mammals from threats posed by marine traffic. As part of funding received under the Oceans Protection Plan's commitment to stronger ecosystem conservation, Transport Canada, Fisheries and Oceans Canada, and Environment and Climate Change Canada have developed the Whales Initiative. This initiative, announced publicly on 22 June 2018, provides an additional $167.4 million to support specific measures for the protection and recovery of endangered whale species in Canada. Under this initiative and over the course of the coming year, Transport Canada will assess and implement measures to both mitigate the impacts of underwater noise on whales (including the southern resident killer whale and St. Lawrence Estuary beluga whale) and reduce the likelihood and impact of vessel strikes on other marine mammals (including the North Atlantic right whale). **Environment and Climate Change Canada's response.** Agreed. Environment and Climate Change Canada does consider the impact and risks that oil spills from ships can have on marine mammals and includes these considerations when advising the Canadian Coast Guard during oil spill response. Environment and Climate Change Canada currently advises the Canadian Coast Guard about the priority "resources at risk" or species and habitats that could be at greatest risk from spilled oil. Environment and Climate Change Canada now collaborates with Fisheries and Oceans Canada scientists, who are the experts on marine mammals, through the Science Table to provide the best scientific advice to the Canadian Coast Guard. However, the procedures for ensuring a consistent exchange of marine mammal information between federal departments is not well documented. Where they are not already defined, Environment and Climate Change Canada will formalize its role and the roles of other government organizations in the emergency response to marine oil spills as well as the measures for protecting the environment, including marine mammals.

Recommendation	Response
Supporting distressed marine mammals	
2.82 Fisheries and Oceans Canada should • develop a national approach for responding to distressed marine mammals; • clarify the roles and responsibilities, including leadership, for delivering the Marine Mammal Response Program; • review the current response capacity and training needs in each region; and • develop a consistent reporting mechanism. **(2.78–2.81)**	**Fisheries and Oceans Canada's response.** Agreed. While Fisheries and Oceans Canada agrees in principle with the recommendation, the recommendation does not fully reflect the significant increases in funding and program modernization, which, as noted in the audit, occurred during the final year of the audit period (that is, up to 1 June 2018). In March 2018, the Government of Canada announced $1 million in annual ongoing funding to support third-party responder groups in doing their critical work. In addition, $4.5 million in separate funds has been set aside over three years to support a new capacity of third-party responder groups to respond to incidents when they occur. This funding will include money for equipment and training for existing and new partners. Further, through collaboration and consultation with international experts including the Canadian third-party responder groups, a national protocol for response was developed in 2017 with clearly defined roles and responsibilities and reporting requirements. These approaches have been developed in a manner that provides national coherence while recognizing the unique geographic differences on the coasts, the specific entanglement and animal involved, and responder expertise. Implementation of these measures began in 2017 and is well under way. Fisheries and Oceans Canada has also significantly invested in the training of its fishery officers since 2009 in order for them to support experts in a safe and timely manner when responding to marine mammal incidents. Under the Oceans Protection Plan, Fisheries and Oceans Canada received an additional $1 million to further train and equip its officers. A training curriculum has been established on the basis of advice received from international experts. Procedures are also in place to guide the officers' work during operations. Implementation began prior to June 2018.

Appendix Distribution of marine mammal species in Canadian waters

Marine mammal	Arctic	East coast	West coast
Dolphins			
Atlantic white-sided dolphin		☑	
Bottlenose dolphin		☑	
False killer whale			☑
Northern right whale dolphin			☑
Pacific white-sided dolphin			☑
Risso's dolphin		☑	☑
Short-beaked common dolphin		☑	☑
Striped dolphin		☑	☑
White-beaked dolphin		☑	
Porpoises			
Dall's porpoise			☑
Harbour porpoise		☑	☑
Seals and sea lions			
Bearded seal	☑	☑	
California sea lion			☑
Grey seal		☑	
Harbour seal (includes Lacs des Loups Marins subspecies in Quebec)	☑	☑	☑
Harp seal	☑	☑	
Hooded seal	☑	☑	
Northern elephant seal			☑
Northern fur seal			☑
Ringed seal	☑	☑	
Steller sea lion			☑
Walrus	☑		
Otters			
Sea otter	☑	☑	☑

Marine mammal	Arctic	East coast	West coast
Whales			
Baird's beaked whale			☑
Beluga whale	☑	☑	
Blainville's beaked whale		☑	
Blue whale		☑	☑
Bowhead whale	☑		
Cuvier's beaked whale		☑	☑
Dwarf sperm whale		☑	☑
Fin whale	☑	☑	☑
Grey whale		☑	☑
Hubbs' beaked whale			☑
Humpback whale		☑	☑
Killer whale (includes southern resident, northern resident, offshore, transient)	☑	☑	☑
Long-finned pilot whale		☑	
Minke whale	☑	☑	☑
Narwhal	☑		
North Atlantic right whale		☑	
North Pacific right whale			☑
Northern bottlenose whale	☑	☑	
Pygmy sperm whale		☑	☑
Sei whale		☑	☑
Short-finned pilot whale		☑	☑
Sowerby's beaked whale		☑	
Sperm whale	☑	☑	☑
Stejneger's beaked whale			☑
True's beaked whale		☑	

Sources: Fisheries and Oceans Canada and the IUCN (International Union for Conservation of Nature) Red List of Threatened Species

Fall 2018

Reports of the Commissioner of the Environment and Sustainable Development to the Parliament of Canada

The Commissioner's Perspective

1. Toxic Substances
2. Protecting Marine Mammals
3. Departmental Progress in Implementing Sustainable Development Strategies
4. Environmental Petitions Annual Report